

**Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement)**

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**Proposed Tri-Party Agreement Modifications  
and Reference Documents for the**

**K BASINS SPENT NUCLEAR FUEL PROJECT**  
**(M-34-98-01A)**



**Public Comment Period**  
**October 5 to November 18, 1998**



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and Reference Documents for the**

**K BASINS SPENT NUCLEAR FUEL PROJECT**  
(M-34-98-01A)

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# Changes Proposed To Hanford's Tri-Party Agreement K Basins Spent Nuclear Fuel Project

U.S. Department of Energy • U.S. Environmental Protection Agency • Washington State Department of Ecology

## Request For Public Comment

We need your review and comment on the proposed schedule for the U.S. Department of Energy's (DOE) K Basins Spent Nuclear Fuel Project. Our plan for the K Basins is to remove thousands of corroding spent nuclear fuel from two large water basins near the Columbia River to dry storage in central Hanford. We also will remove contaminated sludge, water and debris from the basins.

The schedule is provided for public review and comment before we make it final in the Tri-Party Agreement, the legal document that guides the Hanford cleanup. We will accept public comments from October 5 through November 18, 1998. We will consider all public comments and respond to them before making the final decision.

**Submit comments in writing or electronically to:**

Larry Gadbois (509) 376-9884  
U.S. Environmental Protection Agency  
712 Swift Boulevard, Suite 5  
Richland, WA 99352  
E-mail: gadbois.larry@epamail.epa.gov

**To request a copy of the proposed commitments and associated documents, please contact:**

George Sanders (509) 376-6888  
U.S. Department of Energy  
P.O. Box 550 (A5-15)  
Richland, WA 99352  
E-mail: george\_h\_sanders@rl.gov

## Background

A top priority of the Hanford cleanup is the pair of 1.3 million-gallon K Basin pools that store 80 percent of the department's national inventory of spent nuclear fuel. Less than a quarter-mile from the Columbia River, the basins were built in the early 1950s as part of the K East and K West nuclear reactors.

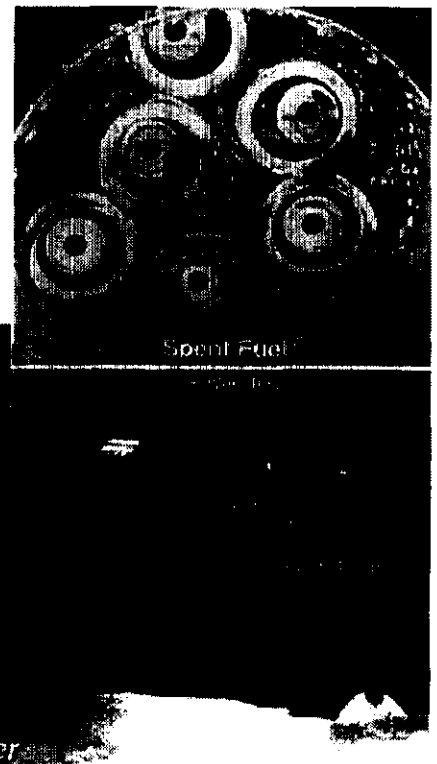
These basins contain "spent" nuclear fuel, meaning the fuel has passed through a nuclear reactor to produce electricity and to be partially converted to plutonium for use in nuclear warheads. During the Cold War, fuel from N Reactor was placed in the K Basins until it could be processed to retrieve the plutonium. In the late 1980s plutonium production at Hanford stopped, leaving behind the two basins of fuel.

The basins were never intended for long term storage. The fuel has been corroding and creating radioactive sludge in the basins. The basin water is now radioactive, as is all the debris in the basins, such as canisters and metal racks. Approximately 65 cubic yards of contaminated sludge is now in the basins. (That's about the volume of six large concrete-mixing trucks.)

The basins already are decades past their design life. The condition of the basins and the fuel is getting worse.

Approximately 15 million gallons of contaminated water leaked to the surrounding soil and groundwater in the late 1970s. Another 90,000 gallons leaked in 1993.

An earlier version of this proposal was the subject of a public comment period in the summer of 1997. The proposal was withdrawn when it became clear that the schedule contained in it could not be met.



# Principal Issues

A new proposed schedule was difficult to achieve. The primary concern was the schedule, how it was developed, and the cost of the project. The Tri-Party Agreement agencies - the DOE, the U.S. Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology) - have been in intermittent negotiations on the spent fuel issue for two years. The agencies failed to reach consensus, and EPA initiated the dispute resolution process in August 1998. The dispute resolution process is a formal procedure in the Tri-Party Agreement for resolving disagreements.

After an in-depth analysis of project scope, performance, cost and schedule, several changes were made to DOE's proposed plan. The result is a schedule in which:

- Fuel removal will begin earlier.
- Additional time is allowed for completion of fuel removal.
- The entire project will be completed sooner.

The dispute was resolved on September 2, 1998. Key elements of the resolution include:

- The Tri-Parties have agreed to regulate the project as an 'Interim Remedial Action' under the Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as Superfund. This provides appropriate enforcement for the project.
- The Parties agreed that DOE will use a single schedule of commitment dates for the Tri-Party Agreement, the Project Hanford Management Contractor, DOE, and the Defense Nuclear Facilities Safety Board. (In the past, these groups had a variety of schedules for the K Basins cleanup.)
- DOE is committed to drive improvements in the cost and schedule for the Spent Nuclear Fuel Project.

## Revised Strategy

Following public comment, schedule commitments will be added to the Tri-Party Agreement as milestones and target dates. Milestones are legally enforceable commitments for key items in the cleanup schedule. Target dates are not legally enforceable, but are schedule dates that if missed, indicate that future milestone dates

are in jeopardy. Key commitments in the proposed milestone and target date series include:

- Begin removal of spent nuclear fuel from the K Basins to dry storage in central Hanford by November 2000.
- Complete fuel removal from both basins by December 2003.
- Begin remediation of K East Basin water to reduce tritium levels by April 2004.
- Begin removal of all water from the basins by September 2004.
- Complete removal of sludge and debris by August 2005.
- Complete removal of spent nuclear fuel, sludge, debris and water from the K Basins by July 2007.

Final disposal of Hanford's spent nuclear fuel is not part of this Tri-Party Agreement proposal. The public will have an opportunity to participate in the decision making process for fuel disposal, when that process occurs.

## How You Can Be Involved

You can review the details of the proposed schedule at the public information repositories. The information also is available on the Internet.

<http://www.hanford.gov/tpa/changelist.htm>

### Public Meeting

Richland, WA

Doubletree Hotel Richland/Hanford House

802 George Washington Way

7:00-9:00 p.m.

Thursday, November 5, 1998

### TPA Spent Fuel Discussion

Portland, OR

Portland State Office Building

300 Northeast Oregon Street

7:00-9:00 p.m.

Thursday, November 12, 1998

# Spent Nuclear Fuel Project Commitments

This chart summarizes the enforceable milestones and target dates for the Spent Nuclear Fuel Project. A "T" in the number indicates a target date.

Number	Description	Date
M-34-00A	Complete removal of spent nuclear fuel, sludge, debris, and water at DOE's K Basins(2)	07/31/07
M-34-03	Submit Proposed Plan and Focused Feasibility Study for Remedial Action for the K Basins	11/30/98
M-34-04	Submit Remedial Design Report/Remedial Action Work Plan for the K Basins	03/31/00
<b>Sludge and Debris Removal</b>		
M-34-05-T01	Submit report on quantities, character, and management of K Basins debris	Annual
M-34-06-T01	Initiate K West Basin spent nuclear fuel canister cleaning operations	12/31/00
M-34-07-T01	Complete final safety basis for the transfer of K Basins sludge	12/31/03
M-34-08	Initiate full scale K East Basin sludge removal	07/31/04
M-34-09-T01	Complete K Basins rack and canister removal	12/31/04
M-34-10	Complete sludge removal from K Basins	08/31/05
<b>Spent Nuclear Fuel Removal</b>		
M-34-11-T01	Complete construction of K West Basin Integrated Water Treatment System	06/30/99
M-34-12	Complete construction of K East Basin Integrated Water Treatment System	02/28/01
M-34-13A-T01	Complete construction and installation of K West Basin Spent Nuclear Fuel Retrieval System	07/31/99
M-34-13B-T01	Complete construction and installation of K East Basin Spent Nuclear Fuel Retrieval System	11/30/00
M-34-14A	Complete K West Basin Cask Facility modifications	09/30/99
M-34-14B-T01	Complete K East Basin Cask Facility modifications	01/31/01
M-34-15A-T01	Complete two bays of the Cold Vacuum Drying Facility construction and installation	10/31/99
M-34-15B-T01	Complete remaining bay(s) of the Cold Vacuum Drying Facility construction and installation	06/30/00
M-34-16	Initiate Removal of K West Basin Spent Nuclear Fuel	11/30/00
M-34-17	Initiate Removal of K East Basin Spent Nuclear Fuel	11/30/01
M-34-18A	Complete Removal of all K West Basin Spent Nuclear Fuel	04/30/03
M-34-18B	Complete Removal of all K East Basin Spent Nuclear Fuel	12/31/03
<b>Basin Water Remediation</b>		
M-34-19	Initiate removal, replacement, and treatment of contaminated K Basins water	04/30/04
M-34-21	Initiate full scale K West Basin water removal	09/30/04
M-34-22	Complete K West Basin water removal	09/30/05
M-34-20	Complete removal, replacement, and treatment of contaminated K Basins water	10/31/05
M-34-23	Initiate full scale K East Basin water removal	10/31/05
M-34-24	Complete K East Basin water removal	10/31/06

## Public Information Repository Locations

### **SEATTLE**

University of Washington  
Suzzalo Library  
Government Publications Room  
(206) 543-5932 ATTN: Eleanor Chase  
E-mail: echase@u.washington.edu

### **SPOKANE**

Gonzaga University  
Tri-Party Information Repository  
Foley Center  
East 502 Boone  
(509) 323-3839 ATTN: Connie Scarppelli  
E-mail: scarPELLI@its.gonzaga.edu

### **RICHLAND**

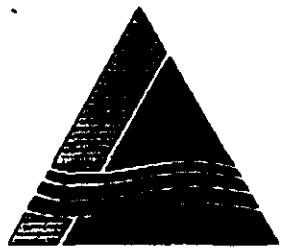
U.S. Department of Energy Public Reading Room  
Consolidated Information Center, Room 101L  
Washington State University, Tri-Cities  
(509) 372-7443 ATTN: Terri Traub  
E-mail: doe.reading.room@pnl.gov

### **PORTLAND**

Portland State University  
Branford Price Millar Library  
Science and Engineering Floor  
Tri-Party Information Repository  
SW Harrison and Park  
(503) 725-3690 ATTN: Michael Bowman  
E-mail: bowmanm@pdx.edu

**Hanford Cleanup Toll-free Line: 1-800-321-2008**

Hanford Cleanup Mailing List  
P.O. Box 1000 B3-35  
Richland, WA 99352



Tri-Party Agreement

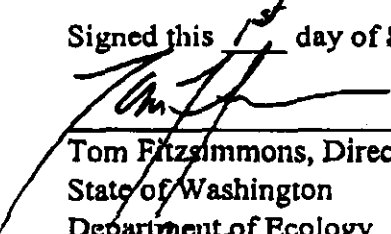
**TENTATIVE AGREEMENT ON  
HANFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER  
MILESTONES FOR REMOVAL OF SPENT NUCLEAR FUEL, DEBRIS,  
SLUDGE, AND WATER FROM THE K BASINS**

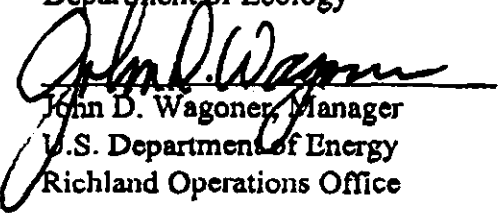
On August 14, 1998, the Spent Nuclear Fuel Project dispute between the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy, Richland Operations Office (RL) was referred to the Senior Executive Committee (SEC) for resolution. This dispute concerned the schedule for the Spent Nuclear Fuel Project, including the removal of spent nuclear fuel, sludge, debris, and water from the K Basins, and the completion of stabilization activities at the K Basins. EPA and RL, the disputing parties, and the State of Washington Department of Ecology (Tri-Parties) have reached tentative agreement on proposed milestone changes for the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement). A summary and copy of the resolution of dispute and M-34 change request are attached.

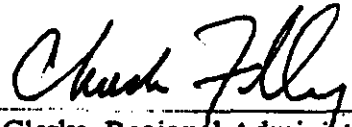
This tentative agreement will be submitted to the public for review and comment for a 45 day period. Copies of this agreement will be available for review at the Tri-Parties' public information repositories. The specific public comment period dates will be coordinated to ensure Hanford Advisory Board opportunity for review and comment. Prior to final agreement, a response to comments document will be developed. The Tri-Parties anticipate that final signatures will take place by December 31, 1998.

The Tri-Parties further agree that the proposed milestones will become final unless EPA and Ecology determine that changes are necessary as a result of public comments. In the event that EPA and Ecology determine that changes are necessary and if the Tri-Parties disagree over changes to the proposed milestones, the changes will be subject to dispute. The Tri-Parties shall attempt to resolve the dispute(s) as provided for in the Tri-Party Agreement paragraph 59 beginning at the SEC level.

Signed this 1st day of ~~September~~ <sup>October</sup>, 1998

  
Tom Fitzsimmons, Director  
State of Washington  
Department of Ecology

  
John D. Wagoner, Manager  
U.S. Department of Energy  
Richland Operations Office

  
Chuck Clarke, Regional Administrator  
U.S. Environmental Protection Agency  
Region 10



Tri-Party Agreement

## RESOLUTION OF DISPUTE

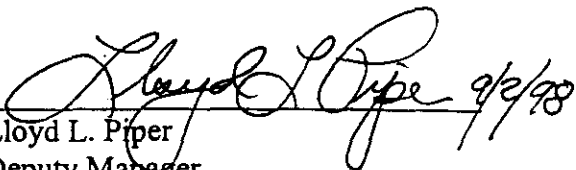
### Milestone M-34 (Spent Nuclear Fuel Project)


On August 14, 1998, the Spent Nuclear Fuel Project dispute between the Environmental Protection Agency and the Department of Energy was referred to the Senior Executive Committee for resolution. This dispute concerned the schedule for the Spent Nuclear Fuel Project, including the removal of spent nuclear fuel, sludge, debris, and water from the K Basins, and the completion of stabilization activities at the K Basins.

The undersigned, members of the Senior Executive Committee, have resolved the dispute.

There are two important components to this resolution:

- (1) The parties have tentatively agreed on a package of changes (Attachment 1) to the Hanford Federal Facility Agreement and Consent Order (the Tri-Party Agreement). The commitments in the change package will alter the project somewhat, compared to the April 15 schedule recently discussed in Congressional hearings. Removal of spent nuclear fuel from K West Basin is speeded up slightly, and K East Basin removal is delayed. The overall end of the project is faster. In sum, the changes are intended to make the project more logical, more efficient, and more likely to reliably deliver the results promised by the milestones. These changes are attached to this Resolution of Dispute. These changes must also be approved by the Department of Ecology. The parties intend to submit this package of changes to the Tri-Party Agreement to a thirty day public comment period to run from approximately October 14 to November 13, 1998. Following a review and response to public comments, the parties expect to approve changes to the TPA by January 1, 1999.
- (2) In order to meet the milestones to be put in the Tri-Party Agreement, it is critical that the Spent Nuclear Fuel Project make continued significant improvements in overall project efficiency and effectiveness. EPA and DOE are encouraged by recent progress, but there is more to be done. EPA and DOE have developed a separate "Framework for Spent Nuclear Fuel Project Improvement" (Attachment 2). This Framework is a key component of this dispute resolution, and forms the foundation for the parties' agreement on the schedule.

  
Lloyd L. Piper  
Deputy Manager  
Richland Operations Office, U.S. DOE

  
Randall F. Smith, Director  
Environmental Cleanup Office  
EPA Region 10



<b>Change Number</b> <b>Draft</b> <b>M-34-98-01A</b>	<b>Federal Facility Agreement and Consent Order</b> <b>Change Control Form</b> <small>Do not use blue ink. Type or print using black ink.</small>	<b>Date</b> <b>DRAFT</b> <b>September 2, 1998</b>												
<b>Originator</b> M-34 Negotiation and Dispute Resolution Teams														
<b>Class of Change</b>  <input checked="" type="checkbox"/> I - Signatories <input type="checkbox"/> II - Executive Manager <input type="checkbox"/> III - Project Manager														
<b>Change Title</b> Negotiation/Dispute Settlement of <u>Hanford Federal Facility Agreement and Consent Order</u> (Agreement) commitments for the removal of spent nuclear fuel, debris, sludge, and water from the K East and K West Basins.														
<b>Description/Justification of Change</b> In 1993, the U. S. Department of Energy (DOE) documented the loss of a substantial quantity of water from the 105 K East Basin where spent nuclear fuel is being stored. DOE operational monitoring data confirmed that the basin water released was contaminated with concentrations of radionuclides exceeding public health and environmental protection standards established by the U.S. Environmental Protection Agency (EPA) for hazardous substances as defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The DOE acknowledged through internal reporting and by notification of EPA's National Response Center that CERCLA hazardous substances (radionuclides) had been released to the environment at the 105 K East Basin. These, and similar earlier releases from K East Basin have served to increase DOE, EPA, and State of Washington Department of Ecology (Ecology) concerns regarding the integrity of these aging basins. (Continued on page 2)														
<b>Impact of Change</b> These M-34-98-01A agreements are made in partial fulfillment of Land Disposal Restriction (LDR) treatment requirements of Agreement milestone M-26-00 (which constitutes an existing Agreement or Order for treatment of mixed waste for purposes of the Federal Facility Compliance Act of 1992 (FFCA)), and as companion documentation to LDR documents submitted by DOE pursuant to Agreement milestone M-26-00.  Approval of this change request by the Parties establishes a new major milestone, and associated interim milestones and target dates governing the removal of spent nuclear fuel, sludge, debris, and basin water. DOE, Ecology, and EPA agree that this Agreement (K Basins) project will be managed through one, unified, project schedule incorporating Agreement milestones, DOE (internal agency) milestones, Defense Nuclear Facilities Safety Board (DNFSB) milestones, and DOE contractor baseline. On approval, Hanford site planning and budget development documents (e.g., Sitewide System Engineering Control Documents, Project Management Plans, and Multi Year Work Plans) will be modified accordingly.														
<b>Affected Documents</b> The <u>Hanford Federal Facility Agreement and Consent Order</u> , as amended, and Hanford Site internal planning and budget documents (e.g., Baseline Change Control Documents, Sitewide System Engineering Control Documents, Project Management Plans, and Multi Year Work Plans).														
<b>Approvals</b>  <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; border-bottom: 1px solid black; padding-bottom: 5px;">DOE</td> <td style="width: 10%; border-bottom: 1px solid black; padding-bottom: 5px;">Date</td> <td style="width: 10%; text-align: center; padding-bottom: 5px;">___Approved</td> <td style="width: 10%; text-align: center; padding-bottom: 5px;">___Disapproved</td> </tr> <tr> <td style="border-bottom: 1px solid black; padding-bottom: 5px;">EPA</td> <td style="border-bottom: 1px solid black; padding-bottom: 5px;">Date</td> <td style="text-align: center; padding-bottom: 5px;">___Approved</td> <td style="text-align: center; padding-bottom: 5px;">___Disapproved</td> </tr> <tr> <td style="border-bottom: 1px solid black; padding-bottom: 5px;">Ecology</td> <td style="border-bottom: 1px solid black; padding-bottom: 5px;">Date</td> <td style="text-align: center; padding-bottom: 5px;">___Approved</td> <td style="text-align: center; padding-bottom: 5px;">___Disapproved</td> </tr> </table>		DOE	Date	___Approved	___Disapproved	EPA	Date	___Approved	___Disapproved	Ecology	Date	___Approved	___Disapproved	
DOE	Date	___Approved	___Disapproved											
EPA	Date	___Approved	___Disapproved											
Ecology	Date	___Approved	___Disapproved											

The release of CERCLA hazardous substances to the environment, concerns regarding basin age and integrity, and mounting concerns regarding the hazards posed by basin contents have resulted in an agreement between the parties that removal of K East and K West Basin contents (spent nuclear fuel, sludge, debris, and basin water) is necessary. DOE, EPA, and Ecology (the Parties) have agreed that use of a CERCLA "Interim Remedial Action" is warranted. A Proposed Plan for an Interim Remedial Action for removal of spent nuclear fuel, sludge, debris and water from the K Basins will be prepared. The K Basins Interim Remedial Action Proposed Plan will be prepared concurrently with the Proposed Plan for Interim Remedial Actions at the 100 Area Remaining Sites.

#### History and Basis of Agreement Negotiations:

In early 1993, the Parties conducted initial Agreement negotiations aimed at establishing an agreed upon technical path forward that would minimize and/or eliminate continued endangerment of public health and further contamination of the environment. These negotiations culminated in the establishment of initial Agreement milestones pertaining to Hanford's K-Basins<sup>a</sup>. These milestones assumed encapsulation of K East spent nuclear fuel and sludge, and subsequent placement of the fuel and sludge into the K West spent nuclear fuel storage basins. The Parties also agreed to an interim milestone requiring the reduction of the concentration of the radionuclide tritium in K East basin water. At that time, the parties agreed that tritium constituted the principal hazardous substance of concern in basin water and posed the greatest potential risk for further release to the environment and endangerment to public health. Milestones implementing this original technical path forward were agreed upon and established by the Parties in the Agreement's Fourth Amendment. Amendment Four was approved by the Parties in January 1994.

Subsequent to finalization of Agreement Amendment Four, additional information regarding the physical character of basin contents has served to increase safety, public health, and environmental concerns, and to underscore the need for action. As a result of increased knowledge and concerns, DOE proposed a new, safer, and more technically sound path based on the removal and management of all spent nuclear fuel, sludge, debris, and water in the K Basins. A technical analysis of the options associated with selection of a revised technical path forward was documented in a National Environmental Policy Act Environmental Impact Statement (NEPA EIS). In March of 1996, an EIS Record of Decision (ROD) was issued documenting the new technical path forward as the preferred alternative for the management of K-Basins spent nuclear fuel. As a result of this programmatic change in direction, the parties agreed to renegotiate the existing Agreement Milestone M-34-00 series. This commitment to renegotiate was documented in Agreement Change Control Form #M-34-95-02 (March 28, 1995).

This Agreement commitment required DOE to submit a signed change request by June 30, 1996, proposing specific dates for milestones covering the removal of spent nuclear fuel and sludge, completion of stabilization/transition activities, and for transfer of Hanford's K East and K West Basins to DOE's Environmental Restoration Program. DOE's change request was also to serve as the basis for initiating associated negotiations.

On June 26, 1996, DOE submitted its signed change request (M-34-96-02) to Ecology proposing milestones and associated commitments, and requesting that the Parties initiate K Basins negotiations. Ecology disapproved the submitted change request in its particulars on July 12, 1996, but accepted it as a basis from which to begin negotiations to develop mutually acceptable K-Basins commitments. Other agreements among the Parties regarding these negotiations may be found at: (1) their August 16, 1996, Agreement In Principle; (2) DOE's November 1, 1996, letter requesting temporary suspension of negotiations (J. D. Wagoner to M. Riveland and C. Clarke); and (3) a resulting Inter-Agency Management Integration Team (IAMIT), November 16, 1996, "Resolution of Dispute". Tentative agreement was reached on April 16, 1997, and the Parties submitted the M-34-97-01 change request for public comment starting June 9, 1997. DOE subsequently informed Ecology and EPA that it was unable to approve finalization of that tentative agreement.

This revised (M-34-98-01A) change request is a result of the Parties' dispute settlement. Assumptions utilized in reaching these milestones include the following:

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<sup>a</sup>Unless otherwise noted, the term "K basins" is used here to denote both K East and K West basins.

1. An appropriate number of both enforceable major and interim milestones, and unenforceable target dates should be established so as to effectively drive each of the four phases of K East and K West Basin work, i.e., spent nuclear fuel, sludge, debris, and basin water.
2. The Parties will employ a CERCLA Interim Remedial Action to abate further releases, or threats of releases of hazardous substances from the basins. This will include development of a Focused Feasibility Study; to assess alternatives for waste disposition that will ensure complete removal of spent nuclear fuel, sludge, debris, and water from the basins in accordance with these M-34-98-01A milestones. It will also include an Interim Remedial Action Proposed Plan, a Record of Decision (ROD), and a Remedial Design Report/Remedial Action Work Plan.
3. The engineered structure of the K Basins and associated soil contamination will be remediated in accordance with the remaining sites ROD for the 100 Area.
4. EPA, with assistance from DOE, will prepare a ROD from the K Basins Administrative Record.
5. DOE will consult regularly with EPA and Ecology on the project and will provide copies of design documents as they are prepared in order to help ensure timely compliance with the M-34-00A milestone series.

New (M-34-98-01A) milestones and target dates (below) replace and delete the current Agreement's series, i.e., M-34-00, M-34-00-T02, M-34-00-T06, M-34-00-T07, M-34-00-T08, and M-34-01. Deleted milestones and targets are as follows:

<u>Milestone</u>	<u>Description</u>	<u>Due Date</u>
M-34-00	Complete actions specified by agreed interim milestones related to remediation of the K East Basins.	TBD
M-34-00-T02	Initiate K East Basin Fuel Encapsulation.	TBD
M-34-00-T06	Initiate K East Basin Sludge Encapsulation.	11/30/96
M-34-00-T07	Complete Encapsulation of the Fuel and Sludge within K East Basin.	12/31/98
M-34-00-T08	Remove all fuel and sludge from both K East and K West Basins in an Encapsulated form.	12/31/02
M-34-01	Contaminated K East Basin water will be removed, replaced, or treated. The timing of this action must be coordinated with encapsulation and the cleaning of the residual contamination in the basin and (as noted below) the alternative selection is dependent on the feasibility of moving encapsulated	TBD

K East Basin fuel and sludge to the K West Basin. The contaminated water will be dispositioned in accordance with reasonable available Hanford Site treatment and/or disposal processes and methods, available at the time of this action. Unless a better option becomes available, the water will be trucked to C-018 for disposal.

If the K East fuel and sludge, once encapsulated, can be moved to the K West Basin (determined through a September 1994 Engineering study target date) the removal and disposal of the contaminated water shall be completed by September 2000. This date is an eighteen-month action, starting in March 1999, three months after fuel and sludge encapsulation is completed. If the transfer of encapsulated K East Basin fuel and sludge to K West Basin is infeasible, contaminated K East Basin water will be replaced by fresh water, starting in September, 1996 at a rate of two million gallons/year and will continue until such time that the tritium concentration in the basin is decreased and is maintained at or below 300,000 pCi/L (the goal is to reduce the tritium concentration in the basin such that resulting groundwater tritium concentration meet drinking water concentration standards, recognizing a lag between basin and groundwater concentrations).

**Action Plan Changes:**

DOE 's K Basins are hereby deleted as "key facilities" subject to Agreement Section 8 (Facility Decommissioning Process). The K Basins are identified as waste sites within the 100-KR-2 Operable Unit, and as such will be managed under Section 7 (Past Practice Processes) of the Agreement and added to Appendix C of the Agreement.

The new M-34-00A major milestone series established by this M-34-98-01A change is as follows:

M-34-00A	Complete removal of spent nuclear fuel, sludge, debris, and water at DOE's K Basins*.	07/31/07
M-34-03	DOE will submit a Proposed Plan and Focused Feasibility Study for Remedial Action for the K Basins to EPA and Ecology for approval. The Focused Feasibility Study will assess alternatives for waste disposition and will include results of chemical treatment tests necessary to support Tank Waste Remediation Systems acceptance of sludge.	11/30/98

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Unless otherwise noted, the term "K basins" is used here to denote both K East and K West basins.

<b>M-34-04</b>	<b>The DOE shall submit a Remedial Design Report/Remedial Action Work Plan for the K Basins Interim Action to EPA and Ecology for approval. This Work Plan shall be constrained by these (M-34-98-01A) Agreement milestones and target dates, and shall propose detailed</b>	<b>03/31/00</b>
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**schedules for initiating and completing activities required for the removal of hazardous substances from K Basins (spent nuclear fuel, sludge, debris, and water).**

**Sludge and Debris Removal**

<b>M-34-05-T01</b>	<b>Submit DOE approved annual report on quantities, character, and management (e.g., segregation and management subsequent to removal) of K Basins debris to Ecology and EPA. The final report of this series shall be the one occurring one year after completion of milestone M-34-00A.</b>	<b>Annually</b>
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<b>M-34-06-T01</b>	<b>Initiate K West spent nuclear fuel canister cleaning operations.</b>	<b>12/31/00</b>
	<b>Canister cleaning operations consist of removal of all contents from each canister and processing of the canisters through the radioactive decontamination apparatus.</b>	

<b>M-34-07-T01</b>	<b>Complete final safety basis for the transfer of K Basins sludge.</b>	<b>12/31/03</b>
	<b>Provide to Ecology and EPA the DOE approved: 1) K Basin Safety Analysis Report (SAR) update; 2) storage facility SAR or SAR modification; and, 3) Safety Analysis Report for Packaging (SARP) authorizing the transfer of K Basins sludge.</b>	

<b>M-34-08</b>	<b>Initiate full scale K East Basin sludge removal.</b>	<b>07/31/04</b>
	<b>DOE shall complete and approve K East sludge removal definitive design documents, all associated construction, and readiness assessments, and initiate removal of sludge from the Basin.</b>	

<b>M-34-09-T01</b>	<b>Complete K Basins rack and canister removal.</b>	<b>12/31/04</b>
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<b>M-34-10</b>	<b>Complete sludge removal from K Basins.</b>	<b>08/31/05</b>
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**Spent Nuclear Fuel Removal**

<b>M-34-11-T01</b>	<b>Complete construction of K West Basin integrated water treatment system to support spent nuclear fuel removal.</b>	<b>06/30/99</b>
	<b>The K West Basin integrated water treatment system shall be constructed, installed, and acceptance test(s) completed.</b>	
<b>M-34-12</b>	<b>Complete construction of K East Basin integrated water treatment system to support spent nuclear fuel removal.</b>	<b>02/28/01</b>
	<b>The K East Basin integrated water treatment system shall be constructed, installed, and acceptance test(s) completed.</b>	
<b>M-34-13A-T01</b>	<b>Complete construction and installation of K West Basin Spent Nuclear Fuel Retrieval System.</b>	<b>07/31/99</b>
	<b>The K West Basin spent nuclear fuel retrieval system shall be constructed, installed, and acceptance test(s) completed.</b>	
<b>M-34-13B-T01</b>	<b>Complete construction and installation of K East Basin Spent Nuclear Fuel Retrieval System.</b>	<b>11/30/00</b>
	<b>The K East Basin spent nuclear fuel retrieval system shall be constructed, installed, and acceptance test(s) completed.</b>	
<b>M-34-14A</b>	<b>Complete K West Cask Facility modifications.</b>	<b>09/30/99</b>
	<b>The K West Cask System Facility modifications shall be constructed, installed and acceptance test(s) completed.</b>	
<b>M-34-14B-T01</b>	<b>Complete K East Cask Facility modifications.</b>	<b>01/31/01</b>
	<b>The K East Cask System Facility modifications shall be constructed, installed, and acceptance test(s) completed.</b>	
<b>M-34-15A-T01</b>	<b>Complete two bays of the Cold Vacuum Drying Facility construction and installation.</b>	<b>10/31/99</b>
	<b>The first two bays of the Cold Vacuum Drying Facility shall be constructed, all process equipment installed, and acceptance tests completed.</b>	

<b>M-34-15B-T01</b>	<b>Complete remaining bay(s) of the Cold Vacuum Drying Facility construction and installation.</b>	<b>06/30/00</b>
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**The remaining bay(s) of the Cold Vacuum Drying Facility shall be constructed, all process equipment installed, and acceptance tests completed.**

<b>M-34-16</b>	<b>Initiate Removal of K West Basin Spent Nuclear Fuel.</b>	<b>11/30/00</b>
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**The Cold Vacuum Drying (CVD) Facility and Canister Storage Building (CSB) shall be ready to receive spent nuclear fuel. The spent nuclear fuel transport system shall be operable. The K West Basin spent nuclear fuel retrieval system shall begin retrieving, cleaning, and packaging spent nuclear fuel, and the First Multi-Canister Over Pack of spent nuclear Fuel will be loaded and transported to the Cold Vacuum Drying facility for processing.**

<b>M-34-17</b>	<b>Initiate Removal of K East Basin Spent Nuclear Fuel.</b>	<b>11/30/01</b>
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**The K East Basin spent nuclear fuel retrieval system shall begin retrieving, cleaning, packaging and removing spent nuclear fuel for transport to the Cold Vacuum Drying Facility.**

<b>M-34-18A</b>	<b>Complete Removal of all K West Basin Spent Nuclear Fuel.</b>	<b>04/30/03</b>
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**This interim milestone will be complete when all spent nuclear fuel has been removed. It is understood that additional fuel fragments may be discovered during removal of the sludge.**

<b>M-34-18B</b>	<b>Complete Removal of all K East Basin Spent Nuclear Fuel.</b>	<b>12/31/03</b>
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**This interim milestone will be complete when all spent nuclear fuel has been removed. It is understood that additional fuel fragments may be discovered during removal of the sludge.**

**Basin Water Remediation**

<b>M-34-19</b>	<b>Initiate removal, replacement, and treatment of contaminated K Basins water where tritium concentrations exceed 300,000 pCi/L.</b>	<b>04/30/04</b>
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<b>M-34-20</b>	<b>Complete removal, replacement, and treatment of contaminated K Basins water such that the tritium concentration in the basin is decreased and is maintained at or below 300,000 pCi/L. This milestone could be satisfied by removing all water.</b>	<b>10/31/05</b>
<b>M-34-21</b>	<b>Initiate full scale K West Basin water removal.</b>	<b>09/30/04</b>
<b>M-34-22</b>	<b>Complete K West Basin water removal.</b>	<b>09/30/05</b>
<b>M-34-23</b>	<b>Initiate full scale K East Basin water removal.</b>	<b>10/31/05</b>
<b>M-34-24</b>	<b>Complete K East Basin water removal.</b>	<b>10/31/06</b>



**FRAMEWORK**  
**for**  
**SPENT NUCLEAR FUEL PROJECT IMPROVEMENT**

- **Preface:** DOE has seriously considered each of EPA's suggestions for improving the SNF project's cost and schedule that would lead to a mutually acceptable resolution of the current dispute. Under the current DOE policy, the Agency is seeking to make regulatory commitments only if it has a reasonable expectation of success. That discipline requires that DOE and its contractors develop and maintain an achievable project baseline that is used as the basis for its TPA commitments. Many of EPA's suggestions have strong merit, several of which have already been incorporated into the proposed TPA change request. Others that require more detailed review by DOE and its contractors will take longer to finalize.

*DOE is committed to drive improvements in the cost, schedule and schedule logic for the SNF Project over the next six to eight months and to making the search for continual improvement a part of the project management mindset. EPA's suggestions, along with those offered by the DNFSB, the contractor staff and DOE, will be aggressively pursued.*

- **Path Forward:** To meet DOE's commitment to aggressively seek improvements in project cost and schedule, the following specific actions are planned:
  - DOE and Fluor Daniel Hanford (FDH) will work with EPA to develop and submit sufficient information to support EPA presentations to the CERCLA National Remedy Review Board by December 1, 1998.
  - Development and approval of Safety Analysis Reports and proper preparations for Operational Readiness Review (ORR) remain a critical path for start of fuel removal. DOE will take action to upgrade both DOE and contractor performance with the aim of achieving improvements in schedule for issue of safety analysis reports and with the aim of eliminating risk in scheduled completion of the ORR. DOE will examine other cost saving suggestions (like reducing the hiring rate of new operations personnel) to see if improvements in schedule for ORR preparations can be achieved.
  - The entire plan for staffing up for operations will be reassessed. This will include a detailed assessment of the benefits derived from delaying K-East Basin fuel removal to start one year after that for the K-West Basin. This planning will include understanding the reasoning for the currently forecast number of operators and HPTs.

- Subcontractor claims will be addressed and closed out as soon as possible. Unpriced contract modifications will be closed out with subcontractors and project baseline cost estimates revised accordingly. Project status reports will be issued periodically to show progress.
- Cost estimating discipline will be improved. Focus will be on the consistent use of acceptable cost estimating practices and procedures. Specific issues raised during TPA dispute resolution meetings will be dealt with and, where supported by specific data, cost changes incorporated into the project baseline.
- The contractor's ability to meet baseline costs and schedules will remain a subject of weekly senior management meetings between DOE and FDH. DOE will verify that project management controls are in place and that the contractor has developed a management system to achieve and sustain control.
- FDH will put in place a system for managing project contingency during September.
- DOE will continue to work closely with the contractors to ensure that project metrics are in place that will allow both DOE and the contractor to properly follow project progress and make timely management decisions.
- The ability to simplify criticality controls for basin operations will be evaluated and appropriate opportunities for more efficient operations will be incorporated into the project baseline.
- A way will be found to more effectively manage sludge removal and treatment in order to reduce costs and optimize integration of sludge work into the overall project schedule.
- DOE and FDH will provide input to EPA of sufficient detail on sludge removal and treatment, debris and water removal, and basin stabilization to support CERCLA document preparation (Feasibility Study, Proposed Plan, and Remedial Design Report/Remedial Action Work Plan).
- The project will make a maximum effort to reduce the number of Cold Vacuum Drying (CVD) units required and to use the first article unit for production work. This will reduce the pressure on project capital funding needs and the FY 00 budget.
- Sub-project task completion dates will be examined so as to improve positive schedule float.
- DOE will sustain its pressure on FDH to follow through on all project baseline revisions to allow the Department to have a final approval baseline by October.

- DOE will continue to ensure that the contractor assigns sufficient management and supervisory personnel with the correct experience to achieve improved project performance.
- The status of project improvement actions items will be discussed and statused at the DOE-contractor weekly management meeting to ensure that senior management is kept apprised of progress being made. Continuous improvement must be demonstrated in reducing project cost.
- FDH has committed to solving the budget gap for FY 99. Additional funds have been requested from DOE Headquarters for FY 00. The goal is to control and reduce costs for the Spent Fuel Project to avoid adverse impacts for other Hanford site projects.
- DOE and EPA will provide routine updates on this improvement plan to Ecology, the Hanford Advisory Board, the Oregon Department of Energy and the Tribes.